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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/702,764	11/01/2000	Makoto Sato	862.C2041	9396

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EXAMINER

WU, JINGGE

ART UNIT PAPER NUMBER

2623

DATE MAILED: 08/26/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/702,764

Applicant(s)

SATO ET AL.

Examiner

Jingge Wu

Art Unit

2623

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 June 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 2, 4-12, 14-22 and 24-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) 7, 17 and 27 is/are allowed.
- 6) ☐ Claim(s) 1-2, 4-6, 8-12, 14-16, 18-22, 24-26, 28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Response to Amendment

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after allowance or after an Office action under Ex Parte Quayle, 1935 Comm'r Dec. 11 (1935). Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, prosecution in this application has been reopened pursuant to 37 CFR 1.114. Applicant's submission filed on June 14, 2004 has been entered. The after-final amendment filed on May 10, 2004 has been entered and made of record. A non-final action follows.

Remarks

Applicant's arguments with respect to all rejected claims have been fully considered, but they are not persuasive.

a. Applicant argues that 1) "Andrew would not teach or suggest a dequantization means that generates a series of coefficients sequences by computing products of the corrected quantization indices and a quantization step, as cited in claim 1."; and 2) "Matsuura would not teach or suggest the feature of correcting the quantization indices using the correction values selected by the correction value selection means, in accordance with values of the quantization indices because Matsuura only teaches 0-bits are added and the number of the added 0-bit corresponding to the number of deleted bits before quantization.

Examiner disagrees.

Regarding 1), Andrew clearly teaches the "computing products of the corrected quantization indices and quantization step" in page 46 lines 12+, see the inverse quantization equation. The inverse quantization is the dequantization, Andrew's equation may be also read on the correction value $r=q/2$, where $d<0$, inverse quantization value $c = q \times d - q/2$; $d=0$, $C= q \times d$; and $q>0$ $C=q \times d + q/2$. and furthermore, the equation in page 46 may also teach the selection step because of selecting the value of d in different situations (note that the selection step is exactly the step that Applicant argued in after final amendment, page 14, paragraph 3).

Regarding to 2) Matsuura is only cited to show selecting different correction values for quantization indices even though it is different from the specification of the application, it is read on the claim language.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-2, 4-6, 8-12, 14-16, 18-22, 24-26 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 11266161A to Andrew (a reference of record) in view of US 6459816 to Matsuura et al. (a reference of record)

As to claim 1, Andrew discloses an image processing apparatus for receiving and decoding a code sequence obtained by encoding an image, comprising:

decoding means for entropy decoding the input code to obtain quantization indices (fig. 17, elements 32 and 33);

means for finding (correcting) best quantization factors (page 47-48);

correction value selection means (page 46 inverse quantization equation) for selecting correction values among plurality of correction values (see remark above), used to correct the quantization indices obtained by said decoding means (page 46);

dequantizing means (fig. 17, element 34) for correcting the quantization indices using the correction values selected by said correction value selection means, in accordance with values of quantization indices and generating a series of coefficient sequences by computing products of the corrected quantization indices and a

quantization step (page 46-47, note that the equation can be read on the dequantization means, also see remark above);

inverse transforming means (fig. 17, element 22) for restoring an image signal by executing a predetermined inverse transform manipulation of the coefficients by said dequantization means (page 29-30, and 46-47).

However, for the sake of argument of correction value selection and dequantization are well known in the art,

Matsuura et al., in an analogous environment, discloses:

correction value selection means (means to select the number of "0" bits need to be added (shifting) to form quantization indices) for selecting correcting value among a plurality of correction values (from 2 "0" bits to 8 "0" bits depend on 1) whether the area is edge of non-edge area; 2) the frequency of components), used to correct the quantization indices obtained by the decoding means (col. 15 lines 37-col. 17 line 62, note that adding or right shifting 2 "0" bits is equal to multiply 4, i.e. correction value is 4);

dequantizing means for correcting the quantization indices using the correction values selected by the correction value selection means, in accordance with values of the quantization indices (fig. 13-18, col. 15 lines 37-col. 17 line 62, col. 18- col. 20 line 22, note that adding or right shifting 2 "0" bits is equal to multiply 4, i.e. correction value is 4, and the step is the correcting the quantization factor used in the encoding process depend on the tag is 0 or 1, i.e. edge or non-edge area, e.g., for edge area, correcting value for HL is multiple of 64, right shifting 5 "0" bits, for non-edge area, correction value is multiple of 16).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to include the scheme of Matsuura in the system of Andrew in order to obtain high compression rate with better image quality (Matsuura, col. 3).

As to claim 2, Andrew further disclose IDWT (fig. 5 and 17).

As to claim 8, Andrew further disclose DWT for encoding the bit planes (fig. 3, page 33-34).

As to claim 9, Matsuura further disclose selecting the correction value in according with a value of the bit plane of the code sequences (col. 12 line 43-col. 16, line 7).

As to claims 11-12, 18-19, 21-22, and 28, claims 11-12, 18-19, 21-22, and 28 are the corresponding method, computer readable medium, and apparatus claims to claims 1-2 and 8-9 respectively. The discussion are addressed with regard to claims 1-3 and 8-9.

As to claim 4, Matsuura further discloses selecting a constant correction value for the coefficients belong to a lowest frequency (col. 16 lines 8-col. 17, note that 4 is selected for LL coefficients).

As to claims 5 and 6, Matsuura further discloses selecting the correction values on the basis of information that pertains to neighboring regions (col. 15 line 46-col. 16, edge or non-edge areas).

As to claim 10, Matsuura further disclose selecting the correction values in according with a value of a flag indicating an image type (col. 18 lines 5-61 and col. Col. 21 lines 19-53).

As to claims 14-16, 24-26, and 20, claims 14-16, 24-26, and 20 are the corresponding method, computer readable medium, and apparatus claims to claims 4-6 and 10, respectively. The discussion are addressed with regard to claims 4-6 and 10.

Allowable Subject Matter

Claims 7, 17, and 27 are allowed.

Contact Information

Any inquiry concerning this communication or earlier communications should be directed to Jingge Wu whose telephone number is (703) 308-9588. He can normally be reached Monday through Thursday from 8:00 am to 5:30 pm. The examiner can be also reached on second alternate Fridays.

Any inquiry of a general nature or relating to the status of this application should be directed to TC customer service whose telephone number is (703) 306-0377.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Amelia Au, can be reached at (703) 308-6604.

The Working Group Fax number is (703) 872-9314.

Jingge Wu

Primary Patent Examiner

